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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/567,538

11/14/2006

Eui Rim Jeong

05-479-C

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10/14/2009

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EXAMINER

NEFF, MICHAEL R

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

10/14/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/567,538 | Applicant(s) JEONG, EUI RIM | |
| | Examiner MICHAEL R. NEFF | Art Unit 2611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Re claim 2, the term 'N' is undefined within the claim language, rendering the claim indefinite, along with all claims dependent to claim 2.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. **Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turcotte et al. (herein after Turcotte) (US Publication 2002/0075092 A1) in view of Lindholm (US Patent 6,477,207 B1).**

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Re claim 1, Turcotte discloses an apparatus for implementing a wideband multicarrier, the apparatus comprising: a digital channelizer (74; Paragraph 0024) for pulse-shaping complex digital modulation signals (76 and 78), digitally mixing the signals (80; Paragraphs 0026-0028) and a digital intermediate frequency (IF) modulation portion for modulating the divided signals into individual IF signals to generate a wideband multicarrier IF signal (84, 86, 88; Paragraphs 0029-0034); however, Turcotte fails to explicitly disclose wherein after digitally mixing the signals the system further comprises dividing the signals into individual signals having different center frequencies.

This design is however disclosed Lindholm. Lindholm discloses wherein after pulse shaping, a signal is digitally mixed (62a, b etc 63) and further dividing the signals into individual signals having different center frequencies (C elements in Figure 6; Column 4 sub band charts; Column 6 line 56-Column 7 line 15).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the sub channel processing disclosed within Lindholm to modify the disclosure of Turcotte for the added benefit of allowing for the individual carrier frequency calculations for a more efficient channel processing.

Re claim 9, Turcotte discloses a method for implementing a wideband multicarrier, the method comprising the steps of: pulse-shaping complex digital modulation signals (Paragraph 0024, elements 76 and 78); digitally mixing the signals (80, Paragraphs 0026-0028); interpolating the divided signals (82); quadrature-mixing the signals (84, 86, 88; Paragraphs 0029-0034); and modulating the signals into digital IF signals (84,

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86, 88; Paragraphs 0029-0034); however, Turcotte fails to explicitly disclose wherein after digitally mixing the signals the system further dividing the signals into individual signals having different center frequencies;.

This design is however disclosed Lindholm. Lindholm discloses wherein after pulse shaping, a signal is digitally mixed (62a, b etc 63) and further dividing the signals into individual signals having different center frequencies (C elements in Figure 6; Column 4 sub band charts; Column 6 line 56-Column 7 line 15).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the sub channel processing disclosed within Lindholm to modify the disclosure of Turcotte for the added benefit of allowing for the individual carrier frequency calculations for a more efficient channel processing.

Allowable Subject Matter

6. Claims 2-8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to anticipate or render obvious the disclosure of the specific design structure of the digital channelizer and IF modulation portion of the system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL R. NEFF whose telephone number is (571)270-1848. The examiner can normally be reached on Monday - Friday 8:00am - 4:30pm EST ALT Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571)272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MICHAEL R. NEFF/
Examiner, Art Unit 2611
/Shuwang Liu/
Supervisory Patent Examiner, Art Unit 2611